PARSONS BRINCKERHOFF

100 S. Charles Street

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PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL WITH STREET LIGHTING AND INTERCONNECT AT THE INTERSECTION OF MD 355 (FREDERICK RD) AND PROFESSIONAL DRIVE/SHOPPING CENTER ENTRANCE IN MONTGOMERY COUNTY. THE RECONSTRUCTION WILL INCLUDE APS/CPS, LED SIGNAL HEADS AND RAMP UPGRADES. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION

GENERAL

- THE INTERSECTION OPERATES IN A NEMA SIX (6) PHASE, FULLY- ACTUATED MODE, BOTH NORTHBOUND AND SOUTHBOUND MD 355 APPROACHES AND THE PEDESTRIAN MOVEMENT ACROSS THE NORTH LEG OF MD 355 SHALL OPERATE CONCURRENTLY. AN ACTUATED AUDIBLE PEDESTRIAN PHASE SHALL BE PROVIDED TO CROSS THE NORTH LEG OF MD 355. BOTH APPROACHES OF PROFESSIONAL DRIVE/SHOPPING CENTER ENTRANCE SHALL OPERATE SPLIT PHASE. ALTERNATE AUDIBLE PEDESTRIAN PHASE WITH AUDIBLE PEDESTRAIN SIGNALS SHALL BE PROVIDED TO CROSS PROFESSIONAL DRIVE/SHOPPING CENTER ENTRANCE.
- 2. THE RIGHT-TURN OVERLAP FOR PROFESSIONAL DRIVE WILL REMAIN UNCHANGED.
- FIREHOUSE PRE-EMPTION FOR NORTHBOUND AND SOUTHBOUND MD 355 WILL REMAIN UNCHANGED.
- A PROPOSED NEMA FULL-TRAFFIC-ACTUATED, EIGHT (8) PHASE CONTROLLER IN A NEMA "S" BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS LOCATION, VIDEO DETECTION INTERFACE SHALL BE INSTALLED INTO THE CABINET BY MONTGOMERY COUNTY FORCES.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADIMISTRATION

ITEM NO.	QUANTITY	DESCRIPTION
900000	1 EA 40 SF	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM SHEET ALUMINUM GROUND MOUNTED SIGN 2 EA - R4-7 (24"×30") 1 EA - M3-3 (30"×15") 1 EA - M1-5 (48"×36") 1 EA - M6-1(1)R (30"×24") 1 EA - M3-3 (24"×12") 1 EA - M1-5 (30"×24") 1 EA - M6-1R (21"×15")
900000	92 SF	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 1 EA - M1-5(6) SHEILD ASSEMBLY (30"×48") 1 EA - M1-5(6) SHIELD ASSEMBLY (48"×72") 1 EA - R3-5L (30"×36") 1 EA - R3-5R (30"×36") 1 EA - R3-6L (30"×36") 6 EA - R10-3(1) PUSHBUTTON SIGN (9"×15") 2 EA - D-3(1) 'PROFESSIONAL DR' (VAR.×16") DUAL FACE

A-1. EQUIPMENT TO BE INSTALLED BY MONTGOMERY COUNTY

ITEM NO.	QUANTITY	DESCRIPTION
900000	1 EA	MONTGOMERY COUNTY CCTV CAMERA, CONTROLLER AND POLE MOUNTED CABINET

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR

ITEM NO.	QUANT	[TY	DESCRIPTION
100000	1	EΑ	MAINTENANCE OF TRAFFIC (PER INTERSECTION)
201032	5	CY	CLASS 2 EXCAVATION
203030	8	CY	TEST PIT EXCAVATION
	4	TON	HOT MIX ASPHALT SUPERPAVE 9.5MM FOR SURFACE; PG76-22. LEVEL-3
504150	30	SY	3 INCH GRADED AGGREGATE BASE COURSE
520109		LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585621	575 150	LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	150	LF	REMOVAL OF EXISTING PAVEMENT MARKING LINES. ANY WIDTH
585700	700		TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH
600000	160	LF	TYPE A CURB ANY HEIGHT OR DEPTH
600000	110	LF	5 INCH CONCRETE SIDEWALK
655105	950	SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
655120	80	SF	PLACING FURNISHED TOPSOIL 4 INCH DEPTH
704345	10	SY	
708220	5	SY	TURFGRASS SOD ESTABLISHMENT
800000	1	EΑ	2-WIRE APS CENTRAL CONTROL UNIT ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE
800000	2	EΑ	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
800000	6	EΑ	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND STONS
800000	6	EΑ	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	4	EΑ	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE
800000	3	EΑ	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD
800000	1	EΑ	MAST ARM POLE & 38' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD
800000	2	EΑ	MAST ARM POLE & 50' MAST ARM ANY 'T' DIMENSION. FOUNDATION & GROUND ROD
800000	1	EΑ	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION. FOUNDATION & GROUND ROD
800000	1	EΑ	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS
800000	1	EΑ	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)
800000	1	EΑ	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&I FOUNDATION & GROUND ROD
800000	120	LF	1 - CONDUCTOR ELECTRICAL CABLE, NO. 2/O AWG, TYPE THHN
800000	410	LF	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) (B.W.G) TYPE TC
800000	475	LF	4 - CONDUCTOR OPTICOM DETECTOR CABLE
800000	250	LF	DISCONNECT, PULL-BACK & REROUTE CABLES
800000	515	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED
800000	160	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	55	LF	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH
800000	66	SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
800000	1	EΑ	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)
802501	500	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
810022	60	LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
811001	5	EΑ	FURNISH AND INSTALL ELECTRICAL HANDHOLE
816215	2	EΑ	OPTICOM NO. 721 DETECTOR EYE
860284	50	EΑ	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860292	1	ĒΑ	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
861105	1400	LF	FLECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	1500	ĹF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	2350		ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)

III. SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS: TO CROSS MD 355 (FREDERICK RD) NW CORNER WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME. THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS FREDERICK AT

PROFESSIONAL WAIT. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS MD 355 (FREDERICK RD) NE CORNER

- WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME. THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS FREDERICK AT DRIVEWAY. WAIT.
- WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE: TO CROSS PROFESSIONAL DRIVE
- WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME. THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS PROFESSIONAL AT FREDERICK. WAIT."
- WHEN THE WALK PHASE BEGINS. THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE. TO CROSS DRIVEWAY
- WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS DRIVEWAY AT FREDERICK, WAIT."
- WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACTS

DISTRICT (DISTRICT 3 - MONTGOMERY)

MR. BRIAN YOUNG DISTRICT ENGINEER 410-787-7630 301-513-7311

MR. ROBERT SNYDER MS. ANYESHA MOOKHERJEE ASSISTANT DISTRICT ENGINEER - TRAFFIC 301-513-7498

DISTRICT UTILITY ENGINEER 410-787-7650

MR. EUGENE BAILEY MR. KEVIN NOWAK & MR. DUANE BERNARD ASSISTANT DISTRICT ENGINEER - CONSTRUCTION 301-513-7336

MR. TOM FOUNTAIN ASSISTANT DISTRICT ENGINEER - MAINTENANCE 301-513-7304

MONTGOMERY COUNTY DOT

MR. VICTOR GRAFTON

301-513-7350

MR. KAMAL HAMUD TRAFFIC ENGINEER 240-777**-**8761

MR. ROBERT RICKETTS SIGNAL SHOP 301-279-1291

OFFICE OF TRAFFIC AND SAFETY

MS. CORREN JOHNSON CHIEF. TRAFFIC OPERATIONS

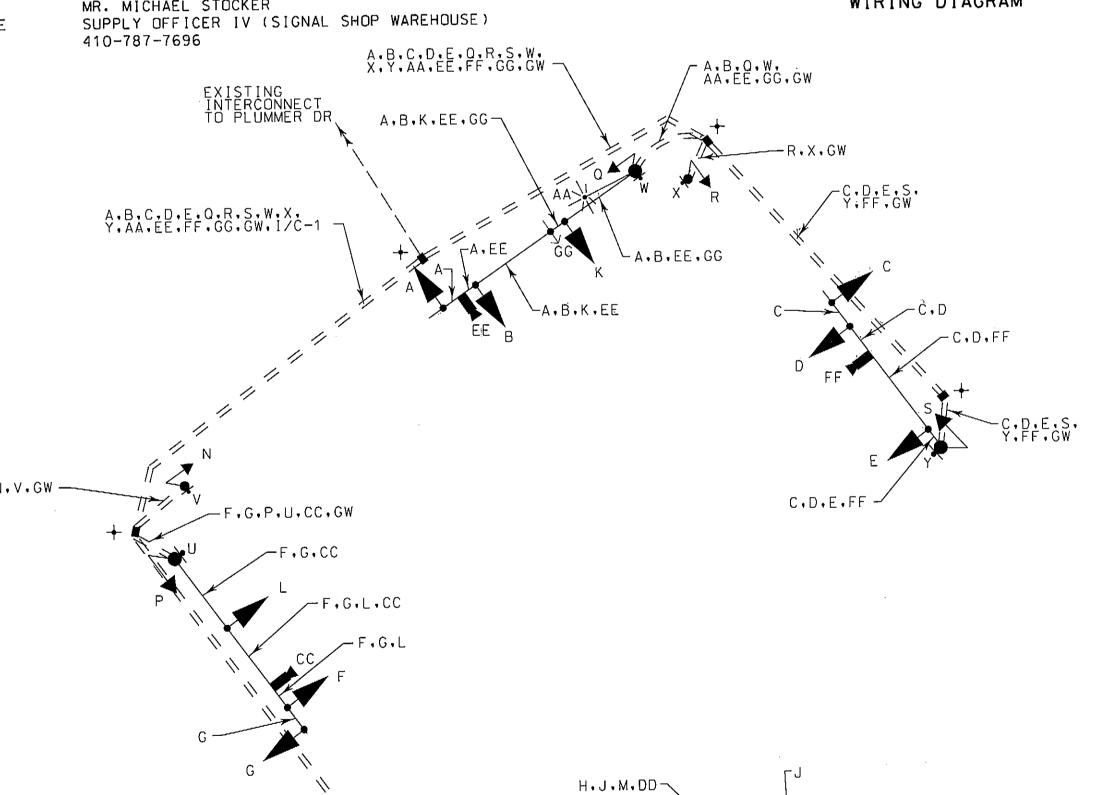
A.B.C.D.E.F.G.N.P.Q.R.S.U.V. W.X.Y.AA.CC.EE.FF.GG.GW.I/C-1

ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS 410-787-7630

MR. EDWARD RODENHIZER CHIEF. SIGNAL OPERATIONS SECTION

CHIEF. SIGN OPERATIONS SECTION 410-787-7670

MR. MICHAEL STOCKER SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE) 410-787-7696



H.J.M.DD.HH

DD,HH

735484-7343"

H.J.T.BB. DD.HH.GW7

EXISTING INTERCONNECT TO TRAVIS AVE

-A.B.C.D.E.F.G.H.J.N.P.Q.R.S.T.U.V, W.X.Y.Z.CC.DD.EE.FF.GG.HH.GW.I/C-1,

13 14 15 16 17 18 R R Y - YD G G G G-GD R Y G

PHASE 1 & 5	∢ G-⁄R	∢ G−⁄R	R	- G-⁄R	∢ G-⁄R	R	R	R	R	R	R	R/–G ►	DW	DW	DW	DW	DW	DW	ر فرنا
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PHASE 1 & 6	∢ G-⁄G	Ι	G	Ř	R	R	R.	R	R	R.	R	R/–G ►	WK	DW	DW	WK	DW	DW	•
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2 & 5 CHANGE	R	R	R	∢Y-⁄G	∢Y -/ G	G	R	R	R	R	R	R	DW	WK	WK	DW	DW_	DW	9 ·
PHASE 2 & 6	G	G	G	G	G .	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW	•
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2 & 6 CHANGE	Υ.	Υ	Y	Υ	Υ	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
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3 CHANGE	R	R	R	R	R	R	∢ Y-/Y	∢ Y-/Y	Y	R _.	R	R	DW	DW	DW	DW	_DW_	DW	-1 \ \ <u></u>
PHASE 3 ALT.	R	R	R	R	R	R	∢ G-/G	∢ G∽∕G	G	R	R	R	DW	DW	DW	DW	WK	WK	
PED CLEARANCE	R	R	R	R	R	R	∢ G-⁄G	∢ G⁄G	G	R	R	R	DW_	DW	DW	DW	FL/DW	FL/DW] [
ALT. 3 CHANGE	R	R	R	R	R	R	∢ Y–⁄Ý,	∢ Y–⁄Y	Υ	R	R	R	DW	DW	DW	WG	DW	DW	
PHASE 4	R	R	R	R	R	R	R	R	R	∢ G−⁄Ġ	∢ G-⁄G	G/−G ►	DW	WD	DW	DW	DW	DW_	<u></u>
4 CHANGE	R	R	R	R	R	R	R	R	R .	∢ Y-/Y	∢ Y–⁄Y	Y/–Y ▶	DW	DW	DW	DW	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	+

PHASE CHART

EMERGENCY VEHICLE PREEMPTION

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PRE-EMPTION	G	G	G	G	G	G	R	R	R .	R	R	R	DW	DW	DW	DW	DW	DW	-
PRE-EMPTION CHANGE	Y	Υ	Y	Υ	Υ	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	- -

WIRING DIAGRAM

R Y G

WIRING KEY

A.B.C.D.E. - 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)

K.L.M.N.P - 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)

U.V.W.X.Y - 2 CONDUCTOR ELECTRICAL Z CABLE (NO. 14 AWG)

- 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TRAY CABLE

- VIDEO DETECTION LEAD-IN CABLE CC.DD.EE.

- OPTICOM CABLE GG•HH

- 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 8 A.W.G.)

- 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 2 A.W.G.)

1 CONDUCTOR (NO. 6 AWG) STRANDED BARE COPPER GROUND WIRE

 REROUTED EXISTING 50-PAIR INTERCONNECT TO PROPOSED CABINET I/C-1

 REROUTED EXISTING 50-PAIR INTERCONNECT TO PROPOSED CABINET PROPOSED GROUND ROD

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF TRAFFIC & SAFETY TRAFFIC ENGINEERING DESIGN DIVISION

GAITHERSBURG, MD

MD 355 @ PROFESSIONAL DRIVE

GENERAL INFORMATION SHEET

SCALE <u>1" = 10'</u>	DATE	MAY 13, 2013	CONTRACT	NOX	<u>Y1515185</u>
DESIGNED BY	L.WAESCHE	COUN	NTY	MONTGOMER	RY
DRAWN BY			/IILE		
CHECKED BY	M.FUKUI	TIMS	NO	L803	
F.A.P. NO		TOD	NO		
TS NO.2517B-GI	DRAWING \$	G-03 OF 03	SHEET	NO. 03	OF 03

C. IF THE CABINET IS TO BE REMOVED SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.